

## Abstract

A computer-based method and system accomplish automatic optimization of a preferred merchandising figure of merit like revenue, profit, etc. by concurrent optimization of prices and in-store promotion schedules for groups of interrelated products in a supermarket or in a chain of supermarkets. The basis of the system is a statistical model that combines effects of prices, promotion schedules and other factors that could influence demands, and produces a flexible nonparametric predictive demand function that can be optimized simultaneously in prices and promotion schedules. The system generates demand predictions for groups of interrelated products by applying data mining procedures to historical database that contains sales data along with various sales conditions, adjusting statistical predictive demand models, and then optimizing them in prices and promotion schedules. The user can interact with the system by selecting and customizing optimization and prediction scenarios provided by the system, and by requesting customized reports with results of particular optimization and prediction schemes.